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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/810,801

03/29/2004

Boris Ginzburg

P-6390-US

9735

49444

7590

03/26/2008

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EXAMINER

SAMS, MATTHEW C

ART UNIT

PAPER NUMBER

2617

MAIL DATE

DELIVERY MODE

03/26/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/810,801

**Applicant(s)**

GINZBURG ET AL.

**Examiner**

MATTHEW C. SAMS

**Art Unit**

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-8,16,18,19,21,22,28-33,39,41 and 42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-8,16,18,19,21,22,28-33,39,41 and 42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. This office action is in response to the applicant's arguments filed on 3/5/2008.
2. Applicant's status of claims (Dated 3/5/2008) does not state claim 22 as pending, however no new claim listing has been given, so the Examiner is assuming claim 22 remains pending.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 28 and 39 are rejected under 35 U.S.C. 102(e) as being anticipated by Ayyagari (US-7,342,896).

Regarding claim 1, Ayyagari teaches a method of hidden node detection at an access point (Fig. 1 [20/24] "CCo") of a wireless communication system (Fig. 1 [30 & 32]) and a plurality of nodes (Fig. 1 [22, 26 & 28]), comprising:

broadcasting a first command to the plurality of nodes to start hidden node detection; (Col. 7 lines 11-21 and Fig. 3 [80])

broadcasting a second command to the plurality of nodes to send a nodes report to the access point; (Col. 7 lines 23-30 and Fig. 3 [88])

receiving a nodes report from each of a plurality of reporting nodes of the wireless communication system (Col. 7 line 62 through Col. 8 line 2 and Fig. 3 [92]) wherein a nodes report includes node communication related parameters of other nodes of the wireless communication system which are measured by a reporting node; (Col. 2 lines 10-13 "qualities of communications links between them", Col. 7 line 66 "Device Class", Col. 8 lines 21-26, Col. 8 lines 54-56 "quality/capacity of each link" and Col. 11 lines 51-58) and

detecting a hidden node by analyzing the measured node communication related parameters of nodes of the wireless communication system based on the nodes reports from the plurality of reporting nodes. (Fig. 10, Col. 8 lines 30-56 and Col. 10 lines 32-57)

Regarding claim 28, Ayyagari teaches a wireless communication system (Fig. 1) comprising:

a node (Fig. 1 [22, 26 & 28]) to generate a nodes report (Col. 7 line 62 through Col. 8 line 2 and Fig. 3 [92]) of a plurality of other nodes of the wireless communication system wherein the nodes report includes one or more communication related parameters of said plurality of nodes whose signals are received and measured at the station; (Col. 2 lines 10-13 "qualities of communications links between them", Col. 7 line 66 "Device Class", Col. 8 lines 21-26, Col. 8 lines 54-56 "quality/capacity of each link" and Col. 11 lines 51-58) and

an access point (Fig. 1 [20/24]) to broadcast a first command to the node to start a hidden node detection (Col. 7 lines 11-21 and Fig. 3 [80]), to broadcast a second command to the node to send the nodes report to the access point (Col. 7 lines 23-30

and Fig. 3 [88]), and to detect a hidden node in the wireless communication system by detection of an unreported node in at least one node report of the plurality of node reports received from one or more nodes of the wireless communication system. (Fig. 10, Col. 8 lines 30-56 and Col. 10 lines 32-57)

Regarding claim 39, the limitations of claim 39 are rejected as being the same reasons as those set forth above in claim 1.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-8, 16, 18, 19, 21, 22, 29-33, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ayyagari in view of Choi (US-6,967,944).

Regarding claim 3, Ayyagari teaches the limitations of claim 1 above and detecting an unreported node (Page 1 [0010]), but differs from the claimed invention by not explicitly reciting sending a command to activate a hidden node protection mechanism on a reporting node.

In an analogous art, Choi teaches a system and method for increasing link capacity in concurrent wireless local area networks that includes activating a hidden node protection on a reporting node. (Col. 4 lines 43-56 and Col. 5 lines 9-31) At the time the invention was made, it would have been obvious to one of ordinary skill in the

art to implement the method of Ayyagari after modifying it to incorporate the activation of hidden node protection on a reporting node of Choi. One of ordinary skill in the art would have been motivated to do this since it enables hidden node protection to be directed only to the affected nodes.

Regarding claim 4, Ayyagari in view of Choi teaches detecting a signal strength below or equal to a threshold; (Choi Col. 5 line 4 through Col. 6 line 3) and

sending a command to activate a hidden node protection mechanism on a reporting node. (Ayyagari Col. 2 lines 25-28, Choi Col. 4 lines 43-56 and Col. 5 lines 17-28)

Regarding claim 5, Ayyagari in view of Choi teaches wherein sending a command to activate a hidden node protection mechanism (Choi Col. 4 lines 43-56 and Col. 5 lines 17-28) comprises:

sending a command to enable a request-to-send\clear-to-send (RTS\CTS) control mechanism. (Choi Col. 4 lines 43-56)

Regarding claim 6, Ayyagari in view of Choi teaches wherein sending a command to activate a hidden node protection mechanism (Choi Col. 4 lines 43-56 and Col. 5 lines 17-28) comprises:

sending a subset of power adjustment commands to a subset of nodes based on the nodes report. (Choi Col. 6 line 57 through Col. 7 line 3)

Regarding claim 7, Ayyagari in view of Choi teaches wherein sending a command to activate a hidden node protection mechanism (Choi Col. 4 lines 43-56 and Col. 5 lines 17-28) comprises:

sending a command to enable a request-to-send/clear-to-send (RTS\CTS) control mechanism. (Choi Col. 4 lines 43-56)

Regarding claim 8, Ayyagari in view of Choi teaches wherein sending a command to activate a hidden node protection mechanism (Choi Col. 4 lines 43-56 and Col. 5 lines 17-28) comprises:

sending a subset of power adjustment commands to a subset of nodes based on the nodes report. (Choi Col. 5 lines 4-28 and Col. 6 lines 57 through Col. 7 line 3)

Regarding claim 16, Ayyagari teaches an apparatus (Fig. 1 [20/24] "CCo") in a wireless communication system (Fig. 1 [30 & 32]) including at least the apparatus and a plurality of nodes (Fig. 1 [20, 22, 26 & 28]), comprising:

a transmitter to broadcast a command to the plurality of nodes to start hidden node detection (Col. 7 lines 11-21 and Fig. 3 [80]) and to broadcast a second command to the plurality of nodes to send a nodes report to the access point; (Col. 7 lines 23-30 and Fig. 3 [88])

a receiver to receive a nodes report from each of a plurality of reporting nodes of the wireless communication system (Col. 7 line 62 through Col. 8 line 2 and Fig. 3 [92]), wherein a nodes report includes one or more node communication related parameters of other nodes of the wireless communication system which are measured by a reporting node; (Col. 2 lines 10-13 "qualities of communications links between them", Col. 7 line 66 "Device Class", Col. 8 lines 21-26, Col. 8 lines 54-56 "quality/capacity of each link" and Col. 11 lines 51-58) and

a hidden node detector to detect a hidden node in the wireless communication system by detection of an unreported node in at least one nodes report from the plurality of reporting nodes. (Fig. 10, Col. 8 lines 30-56 and Col. 10 lines 32-57)

Ayyagari differs from the claimed invention by not explicitly reciting broadcasting a command to the plurality of nodes to start a hidden node protection.

In an analogous art, Choi teaches a system and method for increasing link capacity in concurrent wireless local area networks that includes activating a hidden node protection. (Col. 4 lines 43-56 and Col. 5 lines 9-31) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the method of Ayyagari after modifying it to incorporate the activation of hidden node protection of Choi. One of ordinary skill in the art would have been motivated to do this since it enables hidden node protection for all nodes in the network.

Regarding claim 18, Ayyagari in view of Choi teaches a controller to activate a hidden node protection mechanism on a reporting node if a hidden node is detected. (Choi Col. 4 lines 43-56 and Col. 5 line 9-28)

Regarding claim 19, Ayyagari in view of Choi teaches wherein the one or more node communication related parameters includes a signal strength indicator and the hidden node detector is able to detect a hidden node by analyzing the signal strength indicator. (Choi Col. 5 line 4 through Col. 6 line 23)

Regarding claim 21, the limitations of claim 21 are rejected as being the same reason set forth above in claim 5.

Regarding claim 22, the limitations of claim 22 are rejected as being the same reason set forth above in claim 6.



Regarding claim 29, Ayyagari in view of Choi teaches the access point is able to activate a hidden node protection mechanism at the node to protect the node from transmissions of the hidden node. (Choi Col. 4 lines 43-56 and Col. 5 line 9-28)

Regarding claim 30, Ayyagari in view of Choi teaches the communication related parameters comprises a signal strength indicator of the plurality of nodes and the access point is able to detect a hidden node by analyzing said signal strength indicator. (Choi Col. 5 line 4 through Col. 6 line 23)

Regarding claim 31, Ayyagari in view of Choi teaches wherein the access point is able to detect a hidden node by detection of an unreported node at the nodes report. (Ayyagari Col. 2 lines 25-28, Col. 8 lines 36-56 and Choi Col. 5 lines 4-60)

Regarding claim 32, the limitations of claim 32 are rejected as being the same reason set forth above in claims 5 & 7.

Regarding claim 33, the limitations of claim 33 are rejected as being the same reason set forth above in claim 8.

Regarding claim 41, the limitations of claim 41 are rejected as being the same reason set forth above in claim 3.

Regarding claim 42, the limitations of claim 42 are rejected as being the same reason set forth above in claim 4.

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1, 16, 28 and 39 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW C. SAMS whose telephone number is (571)272-8099. The examiner can normally be reached on M-F 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on (571)272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MCS/  
3/20/2008

/George Eng/  
Supervisory Patent Examiner, Art Unit 2617